

**PFAUDLER**

— Glass-Lined Technology

# DIN BE Reactors

630/800/1000



**GMM**  
— Pfaudler —

# PFAUDLER

— Glass-Lined Technology

For over 130 years, Pfaudler is the leader in developing new technologies to meet the highly specific chemical processing needs of its clients. One reason why our glass-lined equipment is trusted by over 90% of the world's top chemical companies is the sheer reliability of our reaction technologies and comprehensiveness of our glass-lined accessories. These technologies are critical to the safe containment of corrosive contents, maintaining the vessel pressure and ensuring the final batch quality.

In short, our glass-lined technologies are absolutely integral to an effective process.

## PRODUCTS & EQUIPMENT

### Glass Lined Reactors

### Glass Lined Mixing Systems

### Baffling Technologies

### Storage Tanks & Receivers

### Glass Lined Columns

### Accessories

### Glass Lined Instrumentation

### Glass Lined Heat & Mass Transfer







# Pharmaceutical Applications

Perfect in high-pressure environments

Due to their construction, equipment and accessories, BE reactors are the right choice for many pharmaceutical and highpressure applications. Numerous additional products are available from Pfaudler to satisfy all needs of pharmacology.

## Glasslining

Pfaudler PharmaGlass, white or blue

## Supporting structure

- Legs
- Supporting ring
- Brackets

Supporting structure made of steel or stainless steel.

## Heating/Cooling jacket

- Double-jacket design
- Half-coil pipe 89 mm in diameter with a 10% larger heat exchange surface than specified in DIN 28128
- Half-coil pipe 50 mm in diameter

## Insulation

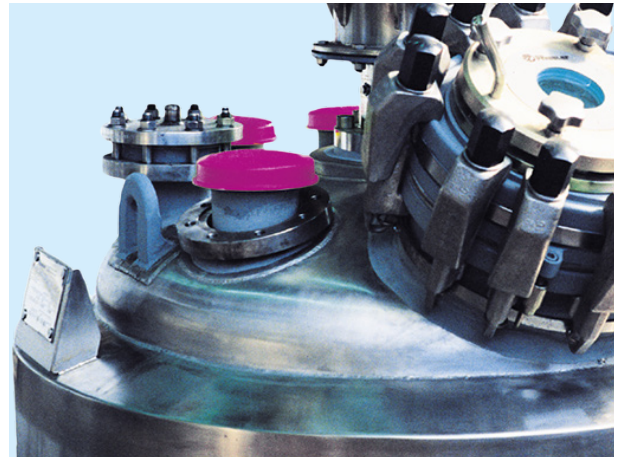
Made of steel/stainless steel as required by the customer, various insulating materials available.

## Agitator flange

- Standard design pursuant to DIN 28137-2
- As loose flange in ultra-clean design specifically for pharmaceutical applications

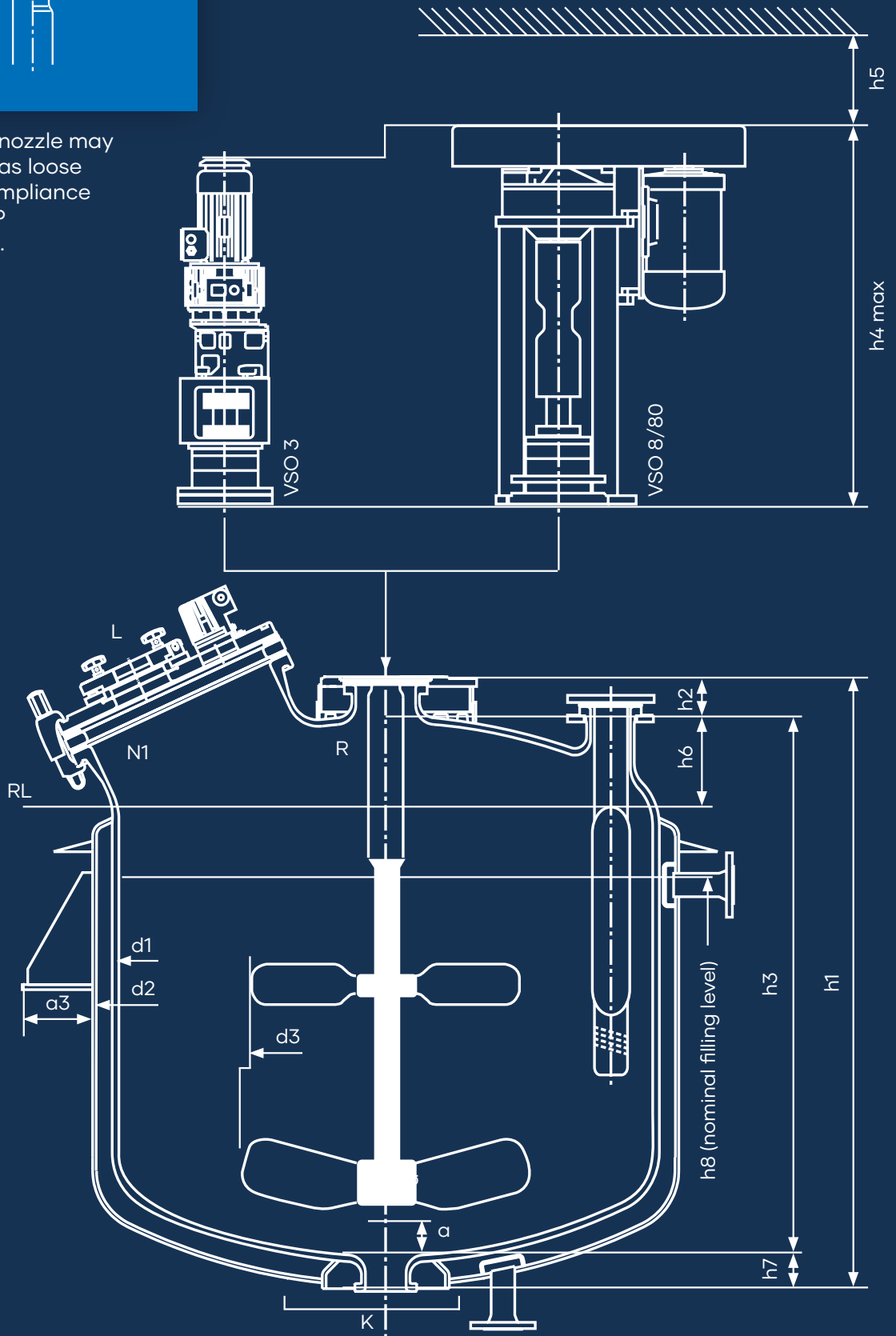
## Manhole cover

- With fused-in Glasslook® sight glass
- With Fillook filling hole cover; funnel tube available separately
- With encapsulated sight glass to DIN 28121, design EC





The agitator nozzle may be designed as loose flanges in compliance with CIP/GMP requirements.



# Cryo-Lock®

And other agitating technologies

## Efficient solutions for any agitating task Cryo-Lock® agitating technique

Cryo-Lock® — the flexible agitating technique made by Pfauder. A shaft to which different turbines can be coupled quickly and easily even at different positions, depending on the process requirements. A large number of turbine shapes is available for combination:

### CBT — Curved Blade Turbine

The universal agitator with a high shearing effect and radial flow

### CBR — Turbine for residual amounts

In connection with an extended shaft, for agitating extremely small residual amounts. The agitating properties are comparable to those of a normal CBT turbine

### FBT — Flat Blade Turbine

High shearing effect, purely radial flow

### PBT — Pitched Blade Turbine

Average shearing effect, combined radial/axial flow

### TBF — Turbofoil

The efficient turbofoil agitator with high axial flow at comparatively low flow disturbance, low torque, low power input

### ANC — Anchor

Anchor-type agitator with high tangential flow for highly viscous products

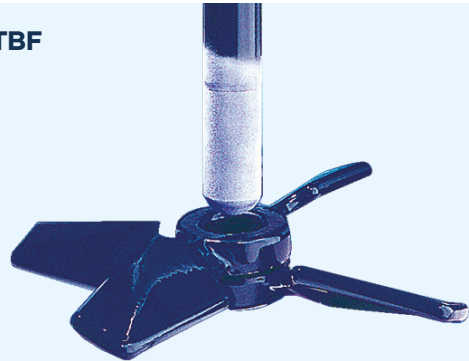
### MXT — Maxflo Turbine

High-performance turbine for agitating substances with an elevated viscosity, or where the effect of the Turbofoil is not sufficient

### GST — Gas Dispersion Turbine

Considerable increase in gas quantities for dispersion and transition regime rates compared to a disk-type agitator

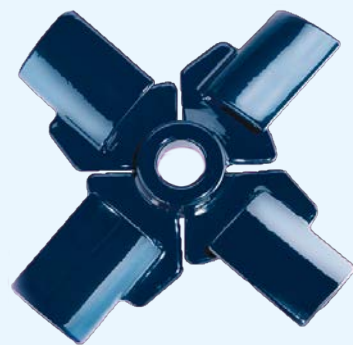
TBF



MXT



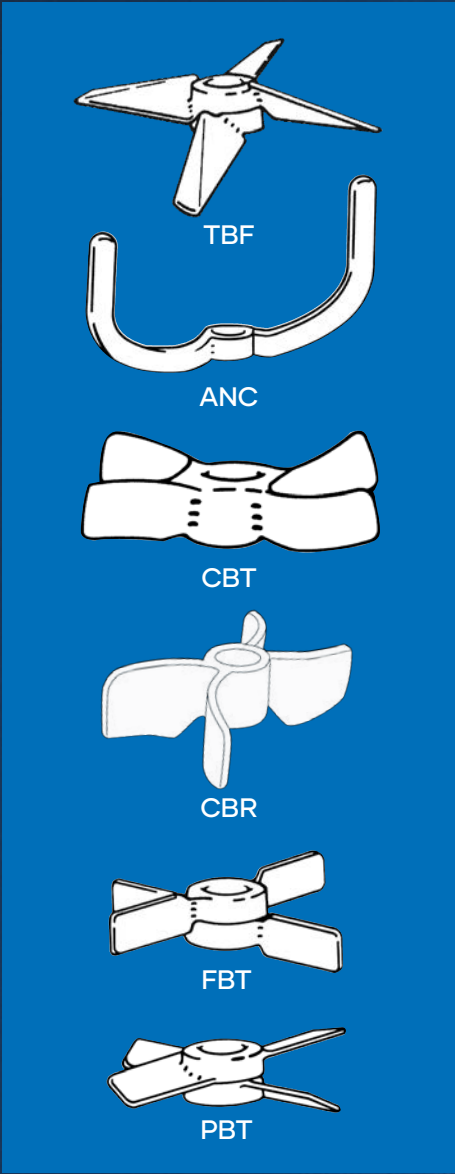
GST



C-baffle







# Other Parts

For variable functionality

## Mechanical seals

- Wet-running mechanical seal (fleXeal UF8, UF8 UC)
- Dry-running, with contact (fleXeal BF7)
- Gas film lubricated dry-running without contact (fleXeal GF7, GF7 UC)
- Mechanical seals specifically for applications in GMP-compliant production. FDA-approved materials on request. (UC)



## Measuring technology

- different constructions of probes, including pH, rH, conductivity
- probes

## Sampling systems

Standart and Loop systems (Flexampler)



## Valves

- Outlet valves in modular design with bellows, gland with optional manual or pneumatic operating mechanism. Also available with temperature measurement in valve cone and proximity-type switches. With bellows in compliance with requirements of TA Luft (German Clean Air Act) and TRR.
- Outlet valves with gland
- Outlet valves with small clearance volumes.

## Internals

- Flange-type baffle, also with glasslined temperature sensor
- C-baffle (concave baffle) with improved effect
- Quatro-Pipe® baffle, also available with temperature measurement and sampling system
- Immersion tubes
- Immersion coolers



### Pfaudler Fillook®

Clear insight into the process through Glasslook® sight glass, easy product sampling, safe filling using funnel tube made of stainless steel.

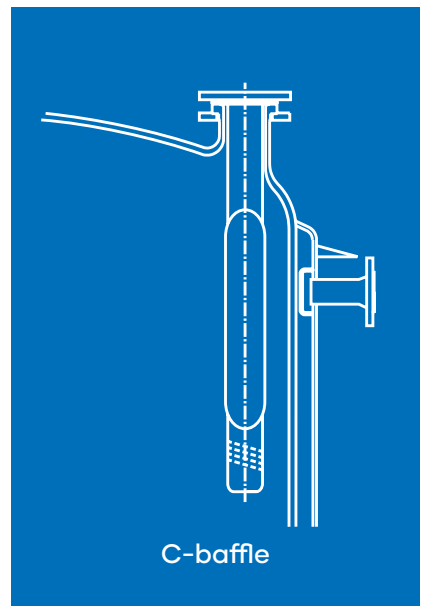
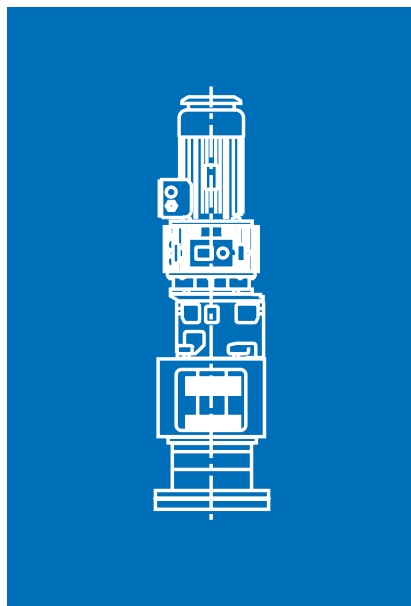
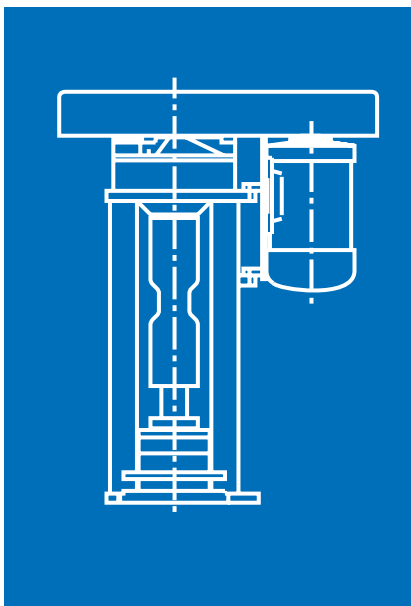
### Drive

- Direct drive for BE 630, BE 800 and BE 1000, 1200 mm in diameter (VSO 3)
- Belt drive for BE 1000, 1400mm in diameter (VSO 8/80)
- Other drives according to customer specification



### Pfaudler Glasslook®

The fracture-proof combination: Sight glass in a glasslined steel mount or directly fused into the manhole cover — resistance to thermal shock, leakage-free, fracture-proof, always clear sight.



# Reactor system BE

## Technical data

TYPE	BE 630	BE 800	BE 1000	BE 1000
			diam. 1400	diam. 1200
Nominal volume	630 l	800 l	1000 l	1000 l
Total volume	861 l	1069 l	1730 l	1474 l
Jacket volume (double jacket)	210 l	250 l	280 l	230 l
Heat exchange surface	4,3 m <sup>2</sup>	5,2 m <sup>2</sup>	5,5 m <sup>2</sup>	4,97 m <sup>2</sup>
Operating temperature	-25/+200 °C	-25/+200 °C	-25/+200 °C	-25/+200 °C
adm. operating pressure, reactor	-1/+6 bar	-1/+6 bar	-1/+6 bar	-1/+6 bar
adm. operating pressure, jacket	-1/+6 bar	-1/+6 bar	-1/+6 bar	-1/+6 bar
Total weight approx.	1600 kg	1800 kg	2800 kg	2300 kg
d <sub>1</sub>	1000 mm	1000 mm	1400 mm	1200 mm
d <sub>2</sub>	1100 mm	1100 mm	1500 mm	1300 mm
d <sub>3</sub>	480 mm	480 mm	735 mm	480 mm
a <sub>3</sub>	180 mm	180 mm	180 mm	180 mm
a	60 mm	60 mm	60 mm	60 mm
Residual quantity	6 l	6 l	15 l	6 l
h <sub>1</sub>	1480 mm	1758 mm	1573 mm	1726 mm
h <sub>2</sub>	90 mm	90 mm	100 mm	90 mm
h <sub>3</sub>	1310 mm	1590 mm	1400 mm	1560 mm
h <sub>4</sub> max	1202 mm	1202 mm	1210 mm	1202 mm
h <sub>5</sub>	—	—	525 mm	—
h <sub>6</sub>	169 mm	170 mm	236 mm	210 mm
h <sub>7</sub>	90 mm	90 mm	90 mm	90 mm
h <sub>8</sub>	912 mm	1140 mm	776 mm	1012 mm

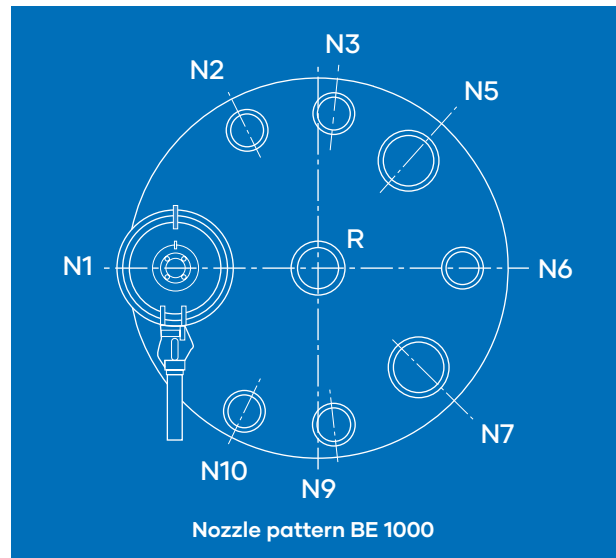
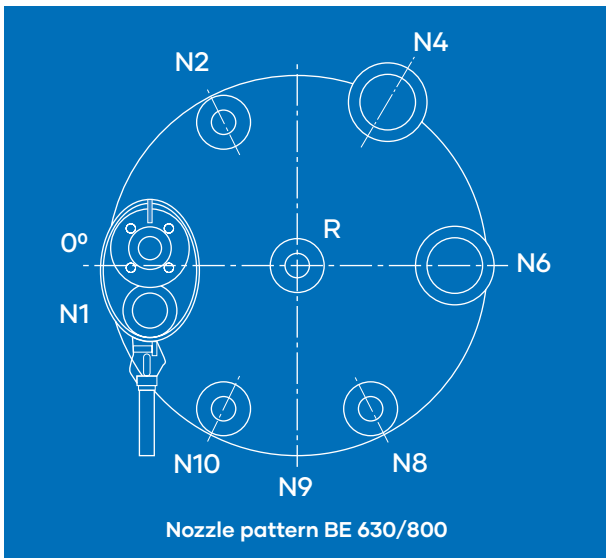
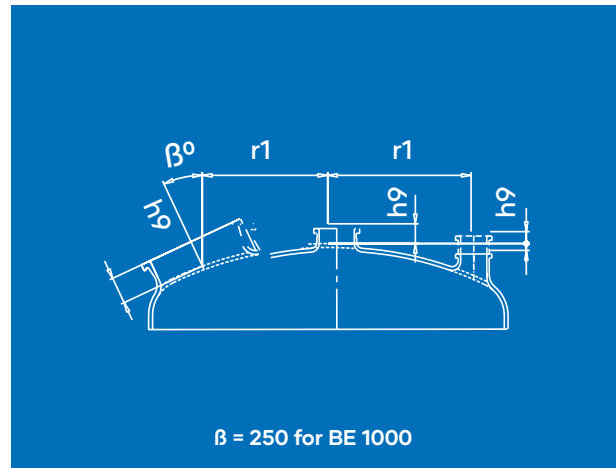
The operating conditions stated in the proposal or in the confirmation of order are binding.



BE 1000 diam. 1400				
	DN	$\alpha^\circ$	$r_1$	$h_9$
N1	500	0	475	125
N2	100	60	575	25
N3	100	95	575	25
N5	200	135	550	50
N6	100	180	575	25
N7	200	225	550	50
N9	100	265	575	25
N10	100	300	575	25
L	100	0		
R	150	—	0	80
K	100	—	0	—

BE 1000 diam. 1200				
	DN	$\alpha^\circ$	$r_1$	$h_9$
N1	350 x 450	0	440	125
N2	100	67.5	500	30
N3	100	95	500	30
N5	200	137.5	450	60
N6	100	180	500	30
N7	200	222.5	450	60
N9	100	265	500	30
N10	100	292.5	500	30
L	100	0		
R	125	—	0	70
K	100	—	0	—

BE 630/BE 800					
	DN	$\alpha^\circ$	$\beta$	$r_1$	$h_9$
N1	320 x 420	0	27	365	143
N2	100	65		380	50
N4	100	120	14	380	90
N6	150	180		380	50
N8	100	240		380	50
N10	100	295		380	50
L	100	0			
R	125	—		0	70
K	100	—		0	—



# Worldwide Presence



GMM Pfaudler is a global leader in corrosion-resistant technologies, systems, and services for the chemical, pharmaceutical, food and energy industry.

Our Branded Product Lines that include PFAUDLER, NORMAG, MAVAG, MIXION, INTERSEAL, EQUILLOY and EDLON, showcase our strength as a group, our capabilities, and our pursuit for constant innovation. With an end-to-end solutions-oriented approach, a global footprint, and a perfectly integrated offering system we are able to meet complex industry demands worldwide.

GMM Pfaudler is driven by 1500+ individuals across 4 continents and 14 global manufacturing facilities around the world. The Group's targeted investments in strategic markets, innovation and competitiveness paves the way forward for GMM Pfaudler's continued legacy.

**100**  
Countries

**1500 +**  
Employees

**04**  
Continents



# Our Global Contacts

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